

CLAIMS

1. A board for printed wiring made by treating the surface of a board whereon a conductor wiring is to be formed by one of
5 the following surface treatment methods:

(1) surface roughening treatment;

(2) plasma treatment;

(3) surface roughening treatment followed by plasma treatment; or

10 (4) surface roughening treatment followed by metal coating process by sputtering.

2. The board for printed wiring according to claim 1, wherein the surface treatment applied is any one of the methods (1),
15 (3) and (4) to carry out surface roughening treatment for achieving center line average roughness Ra in a range from 30 to 300 nm.

3. The board for printed wiring according to claim 1, wherein
20 the surface treatment applied is the method (4) and the surface that has been subjected to the surface roughening treatment is coated with a porous metal layer made of at least one kind of metal selected from among the group consisting of Al, Cr, Co, Ni, Cu and Ag by sputtering.

4. The board for printed wiring according to claim 3, wherein the metal layer is formed by directing sputtered metal particles obliquely toward the surface of the board in sputtering process.

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5. The board for printed wiring according to claim 1, wherein at least the surface of the board whereon the surface treatment is to be applied is formed from at least one kind of resin selected from among the group consisting of
10 polyimide, polyethylene naphthalate, polyamideimide, polyethylene terephthalate, whole-aromatic polyamide, liquid crystal polyester and fluororesin.

6. A method of manufacturing a board for printed wiring,
15 which comprises the steps of:
 preparing a board; and
 treating the surface of the board whereon the conductor wiring is to be formed by one of the following treatment methods:

- 20 (1) surface roughening treatment;
 (2) plasma treatment;
 (3) surface roughening treatment followed by plasma treatment; and
 (4) surface roughening treatment followed by metal
25 coating process by sputtering.

7. A printed wiring board made by forming a conductor wiring by printing an electrically conductive paste that contains (a) metal particles having an average particle diameter of 4 μm or smaller and maximum particle diameter of 15 μm or smaller as an electrically conductive filler and (b) a binder on the surface of the board for printed wiring of claim 1 whereon the surface treatment has been applied.

10 8. The printed wiring board according to claim 7, wherein the metal particles of spherical or granular shape having an average particle diameter of 1 μm or smaller and maximum particle diameter of 5 μm or smaller are used as the electrically conductive filler.

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9. A method of manufacturing a printed wiring board, which comprises the steps of:

preparing a electrically conductive paste that contains (a) metal particles having an average particle diameter of 4 μm or smaller and maximum particle diameter of 15 μm or smaller as an electrically conductive filler and (b) a binder; and

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forming a conductor wiring by a printing method using the electrically conductive paste on the surface of the board for printed wiring of claim 1 whereon the surface treatment

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has been applied.

10. A printed wiring board made by forming a conductor wiring by printing an electrically conductive paste containing metal particles M used as an electrically conductive filler and a binder B in volume ratio of $M/B = 1/1$ to $1.9/1$ on the surface of the board for printed wiring of claim 1 whereon the surface treatment has been applied, etching the surface of the conductor wiring on at least a portion thereof used for connection with an external circuit so as to expose the metal particles on the surface, and forming a plating layer on the surface of the conductor wiring where the metal particles have been exposed by etching.

11. The printed wiring board according to claim 10, wherein the plating layer is formed by electroless plating.

12. A method of manufacturing a printed wiring board, which comprises the steps of:

preparing an electrically conductive paste that contains metal particles M used as an electrically conductive filler and a binder B in volume ratio of $M/B = 1/1$ to $1.9/1$; forming a conductor wiring by a printing method using the electrically conductive paste on the surface of the board for printed wiring of claim 1 whereon the surface treatment

has been applied;

etching the surface of the conductor wiring on at least a portion thereof used for connection with an external circuit so as to expose the metal particles on the surface;

5 and

forming a plating layer on the surface of the conductor wiring where the metal particles have been exposed by etching.